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EXAMINER

UHLIR, NIKOLAS J

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/658,220

Applicant(s)

YAMANAKA ET AL.

Examiner

Nikolas J. Uhler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/08/2003
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. PCT/JP02/02343, filed on 03/13/2002.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 28-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 28-29 require a 1:2 complex chromate and phthalocyanine pigment. It is unclear to the examiner exactly what a 1:2 complex chromate and phthalocyanine pigment is, as the specification does not provide a description of then pigment other than its name and this pigment does not appear to be a recognized by this terminology in the prior art. The examiner is aware of metal complex pigments, phthalocyanine pigments, and chromate pigments from searching the prior art. However a 1:2 complex chromate and phthalocyanine pigment does not

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appear to be known or recognized by this terminology. Is the complex pigment claimed blend of chromate and phthalocyanine pigments, or is it actually a complex between a chromate (i.e. chromate salt) and a phthalocyanine compound? Clarification is requested.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1-2, 4, 6-7, 9, 11, 14-16, 18, and 20-25 are rejected under 35 U.S.C. 102(a) as being anticipated by Takahashi et al. (EP1174457).

7. Takahashi anticipates the limitations of claims 1-2, 3, 6-7, 9, 11, 14-16, 18, and 20-25. In particular, Takahashi explicitly discloses the limitations of these claims. See the following:

-Claims 1 and 2: See sections 7 and 12 of Takahashi

-Claims 4, and 6-7: See section 8 of Takahashi

-Claim 9: see sections 18 and 22 of Takahashi

-Claim 11: see section 14 of Takahashi

-Claim 14: See sections 19-20 of Takahashi

-Claims 15-16: See the sections listed above for claim 1 and also section 23 of

Takahashi. Note: claims 15-16 have been interpreted to require the uppermost inner

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layer to have the required polarity, not the layer on the outermost side of the can. This interpretation is commensurate in scope with the rest of the claim language and the specification.

-Claims 18, 20, 21 see the sections listed above for claims 4, 6-7, and 15-16

Claims 22-25: See section 40 (many of the particles listed are known inorganic color pigments)

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-7 and 15-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuze et al. (JP07109363) in view of Markfort et al. (US5451304).

10. For the purpose of this examination the examiner has relied on a machine translation of the Kuze document.

11. Claim 1 requires a film-laminated metal sheet for a container comprising resin films each containing polyester as a main component on both surface sides of the metal sheet, wherein the polarity force component γ_s^h of the surface free energy of a surface of the resin film that is to be on the interior side of the container and in contact with the contents after the container is formed is 4×10^{-3} N/m or less.

12. With respect to these limitations, Kuze teaches a metal sheet that is laminated on both sides with a polyester film (section 9). The coated metal sheet is intended to be

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used as a container (see abstract). The polyester film contains at least 70% by weight polyethylene terephthalate or ethylene terephthalate units and at 0.3-10% by weight of an immiscible thermoplastic (section 8). Suitable materials for use as the immiscible thermoplastic include polyolefin resins (section 15). These resin layers can be laminated to the metal sheet through a adhesive resin layer (section 24)

13. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize 10% by weight of an immiscible polyolefin in the polyester film taught by Kuze, as Kuze specifically teaches that this amount and type of additive material is suitable.

14. Kuze also teaches that other additives can be included in the polyester films, including lubricants, antioxidants, nucleating agents etc. (section 19).

15. Bearing the above in mind, Markfort also teaches a polyester resin film laminated metal sheet for a can. Markvort teaches that lubricants are beneficially added to the polyester film on the interior surface of the can to improve the forming properties of the film during deep drawing (columns 2 and 6). Preferably, 0.5-2% by weight of wax is added to the film for this purpose (column 2, lines 35-41). Markvort teaches that preferred waxes include carnauba wax and/or a montanic acid ester wax (column 3, lines 20-30).

16. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add 0.5% by weight of carnauba wax to the polyester film coating the surface of the metal sheet that is to form the interior surface of the container taught by Kuze.

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17. One would have been motivated to make this modification in view of the teaching in Markvort that by adding 0.5% by weight of a wax such as Carnauba wax to a the polyester film coating the surface of a metal sheet that is to become the interior of a container, the forming properties during deep drawing are improved.

18. The examiner notes that the above combination does not explicitly teach the requirement in claim 1 that the polarity force component γ_s^h be 4×10^{-3} N/m or less. However, the examiner takes the position that this limitation is met as set forth above. The polyester film that forms the interior of a container taught by Kuze as modified by Markvort above is composed of a polyester resin, 10% by weight of a polyolefin, and 0.5% by weight of carnauba wax. On pages 20-22 of the instant specification, the applicant essentially states that when the amount of polyolefin added to the polyester is within the range specified by claim 2 and when the amount of wax is within the range specified by claim 4, the γ_s^h is met. Thus, as the combination of Kuze with Markvort meets these ranges, the examiner takes the position that the γ_s^h limitation is met.

19. The applicant is reminded that it has been held that where claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established and the burden of proof is shifted to applicant to show that prior art products do not necessarily on inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC 102 or on *prima facie* obviousness under 35 USC 103, jointly or alternatively. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows

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a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the *prime facie* case can be rebutted by **evidence** showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d at 1255, 195 USPQ at 433.

20. Claims 3-5 and 7 are met as set forth above.

21. The limitations of claim 6 require the amount of wax in the polyester resin film utilized on the inner surface of the container to be in the range of 0.8-2% by weight. While Kuze as modified by Markvort does not explicitly teach this range, Markvort does teach that the amount of wax added to the polyester film impacts the dispersability of the wax. As the amount of wax increases, dispersability decreases, and vice versa (see column 2, lines 50-68). Thus, the amount of wax utilized is a results effective variable.

22. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the amount of wax utilized in by Kuze as modified by Markvort within the claimed range so as to achieve a desired level of wax dispersability.

23. The limitations of claims 2 and 6 are met when the amount of wax is controlled to within 0.8-2% by weight.

24. The limitations of claims 15-21 are met as set forth above when the adhesive resin layer taught by Kuze is utilized. It is noted that the examiner interprets claims 15-16 to require that the uppermost layer of the polyester film on the inner surface of the container after container formation is required to have the specified polarity force

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component as opposed to the polyester film on the outer surface. This interpretation is reasonable in view of the other language in these claims and the disclosure at pages 7-9 of the instant specification.

25. Regarding claims 22-25, wherein the applicant requires the inner and/or outer polyester film to contain a pigment or a dye. Kuze teaches that the polyester films can contain a pigment (section 19). Thus, the limitations of claims 22-25 are met when a pigment is utilized.

26. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuze as modified by Markvort as set forth above for claim 1, and further in view of Iwasa et al. (JP200158585).

27. Kuze as modified by Markvort above does not teach the limitations of claim 8, which requires the polyester resin film of claim 1 to have a benzene carbon relaxation time $\geq 150\text{msec}$.

28. However, Iwasa '585 teaches a polyester resin coated metal sheet for a container. Further, Iwasa '585 teaches that by utilizing a polyester having a benzene carbon relaxation time of 150msec or more to form the polyester coating on the metal sheet, the shock resistance of the coating is improved (section 34).

29. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the polyester having a benzene carbon relaxation time of $\geq 150\text{msec}$ taught by Iwasa '585 as the polyester in Kuze as modified by Markvort.

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30. One would have been motivated to make this modification in view of the teaching in Iwasa that by utilizing a polyester having a benzene carbon relaxation time ≥ 150 msec, the shock resistance of the film is improved.

31. Further, Kuze as modified by Markvort does not teach the limitations of claim 11, which require the resin film of claim 1 to comprise ≥ 95 mol % ethylene terephthalate units.

32. However, Iwasa '585 teaches a polyester resin coated metal sheet for a container. Further, Iwasa '585 teaches that by utilizing a polyester having containing > 95 mol% ethylene terephthalate units, the taste property and shock resistance of the film is improved (section 23).

33. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a polyester film containing ≥ 95 mol% ethylene terephthalate units as taught by Iwasa '585 as the polyester of Kuze as modified by Markvort.

34. One would have been motivated to make this modification in view of the teaching in Iwasa that by utilizing a polyester having ≥ 95 mol% ethylene terephthalate units improves the taste properties and shock resistance of the film. One would have been further motivated in view of the fact that Kuze expressly teaches that the film should contain $>$ mol % ethylene terephthalate units.

35. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuze as modified by Markvort as applied to claim 1 above, and further in view of Iwasa (JP200158586).

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36. Kuze as modified by Markvort as set forth above for claim 1 does not teach the limitations of claim 9, which requires that the polyester resin film contain as a main component a biaxially oriented polyester having a melting point in the range of 240-300⁰ C, wherein the content[®] of a terminal carboxyl group is in the range of 10-50 equivalents/ton, and an isophthalic acid component is not substantially contained as an acid component.

37. It is noted that Kuze does teach the polyester film may be biaxially oriented (section 23).

38. Further, Iwasa '586 teaches a polyester resin coated metal sheet for a container. By utilizing a polyester film having identical properties to those claimed by claim 9, Iwasa '586 teaches that a resin coated metal plate having excellent moldability, impact resistance, taste characteristics, and whitening resistance is achieved (see abstract).

39. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the polyester of Iwasa '586 as the polyester in Kuze as modified by Markvort.

40. One would have been motivated to make this modification in view of the teaching in Iwasa '586 that by doing so a resin film coated metal sheet for a container having excellent moldability, impact resistance, taste characteristics, and whitening resistance can be achieved.

41. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuze as modified by Markvort as applied to claim 1 above, and further in view of Iwasa (JP200158583).

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42. Kuze as modified by Markvort as set forth above for claim 1 does not teach the limitations of claim 10, which requires that the polyester resin film be a biaxially oriented film having a young's modulus of 120-220 kg/mm².

43. It is noted that Kuze does teach the polyester film may be biaxially oriented (section 23).

44. Further, Iwasa '583 teaches a polyester resin coated metal sheet for a container. By utilizing a polyester film having identical properties to those claimed by claim 10, Iwasa '583 teaches that a resin coated metal plate having excellent shock resistance and milkiness proof nature can be obtained (section 15).

45. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilized the polyester resin of Iwasa '583 as the polyester of Kuze as modified by Markvort.

46. One would have been motivated to make this modification in view of the teaching in Iwasa '583 that by using a polyester having a young's modulus between 120-220 kg/mm², a resin coated metal sheet for a container having excellent shock resistance and milkiness proof nature can be obtained.

47. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuze as modified by Markvort as applied to claim 1 above, and further in view of Iwasa (JP200158588).

48. Kuze as modified by Markvort as set forth above for claim 1 does not teach the limitations of claim 12, which requires that the polyester resin film be a biaxially oriented

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film having ≥ 93 mol % of ethylene terephthalate units and a crystal size χ in a (100) plane obtained through x-ray diffraction measurement is 6.0nm or smaller.

49. It is noted that Kuze does teach the polyester film may be biaxially oriented (section 23).

50. Further, Iwasa '588 teaches a polyester resin coated metal sheet for a container. By utilizing a polyester film having identical properties to those claimed by claim 12, Iwasa '588 teaches that a resin coated metal plate having good moldability, taste properties, milkiness-proof nature, and shock resistance is attained (section 13).

51. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the polyester resin of Iwasa '588 as the polyester of Kuze as modified by Markvort.

52. One would have been motivated to make this modification in view of the teaching in Iwasa '588 that by using a polyester having ≥ 93 mol % of ethylene terephthalate units and a crystal size χ in a (100) plane obtained through x-ray diffraction measurement is 6.0nm or smaller, a resin coated metal plate having good moldability, taste properties, milkiness-proof nature, and shock resistance is attained (section 13).

53. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuze as modified by Markvort as applied to claim 1 above, and further in view of Iwasa (JP200158584).

54. Kuze as modified by Markvort as set forth above for claim 1 does not teach the limitations of claim 13, which requires that the polyester resin film be a biaxially oriented

film having ≥ 93 mol % of ethylene terephthalate units and a crystal orientation parameter R obtained through x-ray diffraction measurement is 20×10^{-2} or more.

55. It is noted that Kuze does teach the polyester film may be biaxially oriented (section 23).

56. Further, Iwasa '584 teaches a polyester resin coated metal sheet for a container. By utilizing a polyester film having identical properties to those claimed by claim 13, Iwasa '584 teaches that a resin coated metal plate having good moldability, taste properties, milkiness-proof nature, and shock resistance is attained (section 13).

57. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the polyester resin of Iwasa '584 as the polyester of Kuze as modified by Markvort.

58. One would have been motivated to make this modification in view of the teaching in Iwasa '588 that by using a biaxially oriented polyester film having ≥ 93 mol % of ethylene terephthalate units and a crystal orientation parameter R obtained through x-ray diffraction measurement is 20×10^{-2} or more, a resin coated metal plate having good moldability, taste properties, milkiness-proof nature, and shock resistance is attained.

59. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuze as modified by Markvort as applied to claim 1 above, and further in view of Miyazawa et al. (US5753328).

60. Kuze as modified by Markvort as set forth above for claim 1 does not teach the limitations of claim 14, which require a the polyester film of claim 1 to be biaxially oriented and requires the region where the birefringence of the laminate on the inner

surface side of the container to be smaller than 5μ from a contact interface with the metal sheet in the thickness direction.

61. The examiner interprets claim 14 to mean that a portion of the polyester resin film that is on the interior surface of the container after container formation has a birefringence of 0.02 or less, and that portion is located less than 5μ from the contact interface of the metal sheet in the thickness direction.

62. Bearing this interpretation in mind, Miyazawa teaches a polyester coated metal sheet that is used in making containers. Miyazawa teaches that by controlling the birefringence of the portion of the polyester film contacting the metal sheet to within the range of 0.005-0.08, the adhesion of the polyester to the metal sheet is improved (see column 6, lines 18-46).

63. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the birefringence of the portion of the polyester utilized by Kuze as modified by Markvort that contacts the metal sheet to 0.005, as taught by Miyazawa.

64. One would have been motivated to make this modification in view of the teaching in Miyazawa that by controlling the birefringence of the portion of the polyester film that contacts the metal sheet to 0.005, the adhesion of the film to the metal is improved.

65. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuze as modified by Markvort as applied to claims 22 above, and further in view of Tanaka (US6217994).

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66. Kuze as modified by Markvort as set forth above does not teach the limitations of claims 26-27, which require that the resin film on the inner surface side of the container contain a aromatic diamine base organic pigment (claim 26) or a benzimidazolone pigment (claim 27).

67. As noted above, Kuze teaches that the polyester films can contain a pigment.

68. Bearing this in mind, Tanaka teaches polyester based paint compositions for coating metal sheets (column 1, lines 4-10). The paint suitably contains one or more coloring pigments (column 5, lines 25-33). Suitable pigments include organic yellow pigments such as benzimidazolone and isoindolinone (column 6, lines 1-8).

69. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize benzimidazolone or isoindolinone as taught by Tanaka as the pigment in the polyester resin taught by Kuze.

70. One would have been motivated to make this modification in view of the teaching in Kuze that pigments can be added to the polyester films, the teaching in Tanaka that benzimidazolone and isoindolinone are suitable pigments for polyester compositions utilized to coat metal sheets, and in view of the aesthetic benefits one would expect to gain as a result.

Conclusion

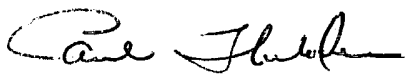
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhler whose telephone number is 571-272-1517. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J. Thibodeau can be reached on 571-272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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